

ECE 476/676 - Test #2:

LCD Graphics, Touch Screens, Interrupts, Python Programming

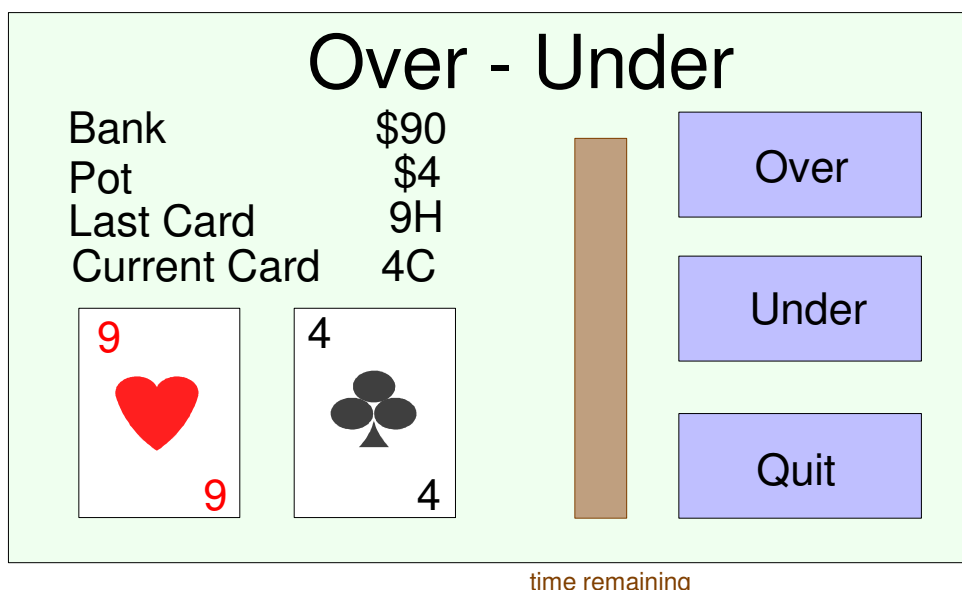
Cassino Games: Over - Under

Write and demonstrate a python program to play a game of Over / Under on your Pico board

- Press GP14 to start of the game. At the start, you have \$100 in your bank account.
- Press GP15 to start a new game.
- At the start of the game, a deck of 52 playing cards are shuffled.
- The player's bank is reduced by \$10 (it costs \$10 to play)
- The pot is set to \$1
- The top card of the deck is revealed
- The game then continues in rounds.

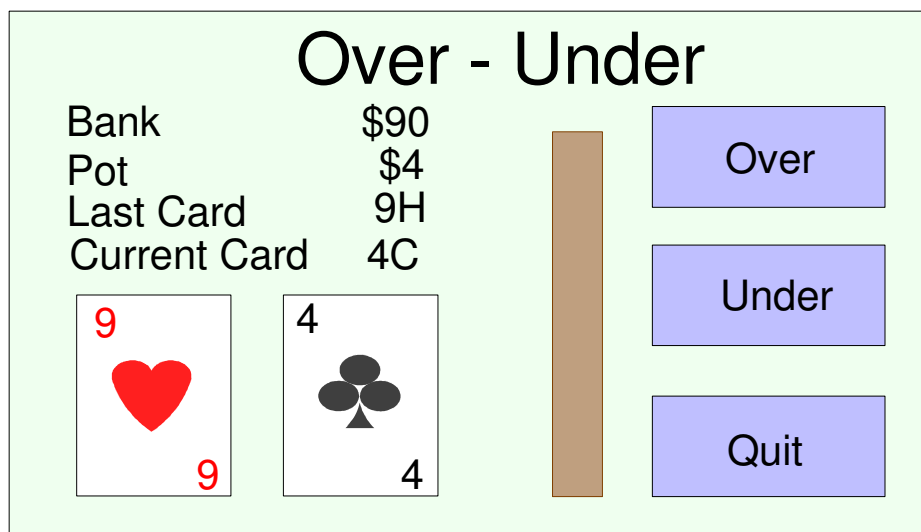
For each round

- The player looks at the current card then bets
 - Over (the next card will be larger than the current card . Aces are always low.)
 - Under (the next card will be smaller than the current card)
 - Quit (end the game)
- If the player quits the game, the pot is added to the player's bank and a new round begins.
- If the player bets over/under, the next card is revealed.
 - The last card becomes the current card. The card at the top of the deck becomes the current card.
 - If the player was correct, the pot doubles and a new round begins (the player bets over/under/quit based upon the newly revealed card).
 - If the player was incorrect, the game is over and the player loses. The bank collects the pot.
 - If there was a tie, the pot remains unchanged and the game continues.
- Each round, the player has 10 seconds to place a bet. Failure to place a bet results in the player losing.
- The game continues until the player loses or quits (cashes out).



Grading

- (10pt) The graphics screen displays the game status
 - Bank, Pot, Last Card, Current Card
 - Graphics for the cards are optional
- (10pt) Use the touch screen to bet over / under / quit
 - Use the keyboard if you can't get this to work (no points)
- (10pt) Use edge interrupts to reset your bank to \$100 when you press GP14
- (10pt) Use edge interrupts to start a new game when you press GP15.
 - \$10 is deducted from your bank
 - The pot is set to \$1
 - The deck is shuffled
 - The top card is revealed (current card)
- (10pt) Use a periodic timer interrupts to keep track of the 10 second time limit per round
 - 100ms per interrupt
 - Update the time remaining each interrupt
- (10pt) Time remaining is displayed on the LCD (bar is one option)
- (10pt) Selecting over / under generates a new card
 - Current card becomes the last card
 - The card at the top of the deck becomes the current card
- (10pt) Scoring is done correctly
 - If you bet correctly, the pot is doubled and a new round begins
 - If there is a tie, the pot remains unchanged and a new round begins
 - If you bet incorrectly or time runs out, you lose The pot is cleared
 - If you quit, the pot is added to your bank
 - If you lose or quit, the game waits for a GP15 interrupt to start a new game
- (10pt) Add a cookie
 - Tapping on the current card three times turns on LED GP16
 - When GP16 is on, the next card will always be an Ace
 - After the Ace is revealed, GP16 turns off
- (10pt) Demo your over under game (video preferred)



10s timer driven by periodic timer interrupts